

## ABSTRACT OF THE DISCLOSURE

A method of producing with the collapsing process an optical fiber preform capable of forming an optical fiber in which an increment in transmission loss due to OH absorption is reduced, and an optical fiber preform and an optical fiber produced with the method. The method comprises reducing the amount of hydrogen atom-containing substances in a glass pipe, sealing one end of the glass pipe, and collapsing the glass pipe to obtain a solid body. One aspect of the method comprises heating the glass pipe at 550 °C or below, sealing one end of the glass pipe, and collapsing the glass pipe to obtain a solid body. The preform produced with the method has a feature in that its portion formed by the interface portion at the time of the collapsing contains OH groups at a concentration of 100 wt. ppb or below. The optical fiber produced by drawing the preform has a feature in that its OH-originated loss is less than 0.5 dB/km at a wavelength of 1.38  $\mu$ m.